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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,002	06/19/2003	Kazutora Yoshino	Y02A001	6041
7590	06/30/2005		EXAMINER	
Kazutora Yoshino 7227 Divinity Lane Eden Prairie, MN 55346			RAPP, CHAD	
			ART UNIT	PAPER NUMBER
			2125	

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/600,002	YOSHINO, KAZUTORA
	Examiner	Art Unit
	Chad Rapp	2125

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 19 June 2003.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-14 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_

Art Unit: 2125

1. Claims 1-14 are presented for examination.
2. An examination of this application reveals that applicant is unfamiliar with patent prosecution procedure. While an inventor may prosecute the application, lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed. Applicant is advised to secure the services of a registered patent attorney or agent to prosecute the application, since the value of a patent is largely dependent upon skilled preparation and prosecution. The Office cannot aid in selecting an attorney or agent.
3. Applicant is advised of the availability of the publication "Attorneys and Agents Registered to Practice Before the U.S. Patent and Trademark Office." This publication is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

#### **Content of Specification**

- (a) Title of the Invention: See 37 CFR 1.72(a) and MPEP § 606. The title of the invention should be placed at the top of the first page of the specification unless the title is provided in an application data sheet. The title of the invention should be brief but technically accurate and descriptive, preferably from two to seven words may not contain more than 500 characters.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.
- (d) Incorporation-By-Reference Of Material Submitted On a Compact Disc: The specification is required to include an incorporation-by-reference of electronic documents that are to become part of the permanent United States Patent and Trademark Office records in the file of a patent application. See 37 CFR 1.52(e) and MPEP § 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text were permitted as electronic documents on compact discs beginning on September 8, 2000.

Or alternatively, Reference to a "Microfiche Appendix": See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.

- (e) Background of the Invention: See MPEP § 608.01(c). The specification should set forth the Background of the Invention in two parts:
  - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
  - (2) Description of the Related Art including information disclosed under 37 CFR 1.97 and 37 CFR 1.98: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: See MPEP § 608.01(g). A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet or electronic page (37 CFR 1.52(b)(3)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps. See 37 CFR 1.75 and MPEP § 608.01(i)-(p).
- (j) Abstract of the Disclosure: See MPEP § 608.01(f). A brief narrative of the disclosure as a whole in a single paragraph of 150 words or less commencing on a separate sheet following the claims. In an international application which has entered the national stage (37 CFR 1.491(b)), the applicant need not submit an abstract commencing on a separate sheet if an abstract was published with the international application under PCT Article 21. The abstract that appears on the cover page of the pamphlet published by the International Bureau (IB) of the World Intellectual Property Organization (WIPO) is the abstract that will be used by the USPTO. See MPEP § 1893.03(e).
- (k) Sequence Listing, See 37 CFR 1.821-1.825 and MPEP §§ 2421-2431. The requirement for a sequence listing applies to all sequences disclosed in a given application, whether the sequences are claimed or not. See MPEP § 2421.02.

***Claim Rejections - 35 USC § 112***

***Claim Objections***

54 Claims 1-14 are objected to because of the following informalities:

Remove all brackets in claims 1-14.

There are also two claim 11s. One should be changed to claim 12.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. Claims 11 and 12 rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 1 "The three dimensional object generator composed of the group selected from" should be changed to "A three dimensional object generator composed of a group selected from".

In claim 7, lines 2-3 "the slicing type 3 dimensional image input devices" should be changed to "a slicing type 3 dimensional image input devices".

In claim 10, line 1 "the matrix light unit device composed of the group selected from" should be changed to "A matrix light unit device composed of a group selected from".

Claim 11, line 3 "the incoming beam" should be changed to "an incoming beam".

Claim 11 second one, line 3 "the incoming beam" should be changed to "an incoming beam".

Claim 14, line 2 "the controlling system" should be changed to "a controlling system".

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Langer et al. Langer et al. teaches the claimed invention (claim 1) including a three dimensional object generator.

a. Beam projector means, beam navigator means, image generator means, material supply system means, controller means, optionally, input device means, optionally, vari-focal means, optionally, object-projector position controller means is taught as the beam of the projector (col. 2 lines 10-21).

As to claim 2, Langer et al. teaches wherein said Beam projector means is composed of the group selected from photon generator, electron generator, particles generator, ion generator, laser, arc lamp, visible light, ultra violet light, infrared light, microwave, ultrasound is taught as beam of the projector. Light source can be ultra violet or a laser (col. 1 line 63 to col. 2 line 9).

***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

11. Claims 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Jang et al.

Jang et al. teaches the claimed invention(10) including the matrix light unit device.

a. Matrix light unit device, elementary unit means, base frame means, optionally controller means is taught as matrix light emitting diodes controlled by light source controller([0047] and [0048]).

As to claim 11, Jang et al. teaches wherein said elementary unit means is composed of the group selected from surface material unit designed to change the height, location and/or angle relative to the base frame means in order to deflect the incoming beam to right direction, The material can be reflective or non-reflective. It can be silicon or other materials is taught as the motion controller and light source controller and hardware controller([0060] and [0063]).

As to claim 12, Jang et al. teaches wherein said elementary unit means is composed of the group selected from surface material unit designed to change the height, location and/or angle relative to the base frame means in order to deflect the incoming beam to right direction, The material can be reflective or non-reflective. It can be silicon or other materials. This is used for optical images generation and/or object generation and/or optical patterning of neural computer is taught as the motion controller and light source controller and hardware controller([0060] and [0063]).

As to claim 13, Jang et al. teaches wherein said base frame means is composed of the group selected from the base that support the elementary unit means. This can be stable or movable is taught as the base (see fig. 1 part 16).

As to claim 14, Jang et al. teaches wherein said controller means is composed of the group selected from the controlling system to control each element of said elementary unit means and optionally base frame means is taught as the computer ([0063]).

***Claim Rejections - 35 USC § 103***

12 The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3-5 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer et al. in view of Fries.

Langer et al. teaches the claimed invention (claim 1) see paragraph number 9 above.

As to claim 3, Fries teaches wherein said beam navigator means is composed of the group selected from proper combination of lenses, tele-centric lens system, vari-focal lens system, magnetic lens system, optical lens system, reflector, lens-less beam navigator system is taught as lens system of first lens and second lens([0033])).

As to claim 4, Fries teaches wherein said image generator means is composed of the group selected from micro-display, photo-display, pattern generator, digital mirror device, liquid crystal, liquid crystal on silicon, grating light valve, matrix grating light valve, matrix light unit is taught as deformable and/or digital mirror([0037]).

It would have been obvious to one of ordinary skill at the time the invention was made or used to modify the teachings of Langer et al. with the teachings of Fries because Fries deals with

forming three dimensional products. The application eliminates the problems associated with using masks for photo stimulated etching, patterning glass and photosensitive metal deposition by using a mask less pattern generator

As to claim 5, Fries teaches wherein said material supply system means is composed of the group selected from liquid plastic, metal, plastic, liquid material, solid material, gas material, photo-sensitive material, electron-sensitive material, materials that react with beams is taught as metal deposition(abstract).

It would have been obvious to one of ordinary skill at the time the invention was made or used to modify the teachings of Langer et al. with the teachings of Fries because Fries deals with forming three dimensional products. The application eliminates the problems associated with using masks for photo stimulated etching, patterning glass and photosensitive metal deposition by using a mask less pattern generator

As to claim 8, Fries teaches wherein the said vari-focal lens means is composed of the group selected from piezo-electric lens, lens with motion generator, mechanical lens, deformable lens, acousto-optic lens, electro-optic lens, lenses that changes the focus with control is taught as deformable and/or digital mirror([0037]).

It would have been obvious to one of ordinary skill at the time the invention was made or used to modify the teachings of Langer et al. with the teachings of Fries because Fries deals with forming three dimensional products. The application eliminates the problems associated with using masks for photo stimulated etching, patterning glass and photosensitive metal deposition by using a mask less pattern generator

***Claim Rejections - 35 USC § 103***

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. Claims 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer in view of Tseng.

Langer et al. teaches the claimed invention (claim 1) see paragraph number 9 above.

As to claim 6, Tseng teaches wherein said controller means is composed of the group selected from material supply controller, image controller, height controller, valve controller, input image controller, computer, drives is taught as position controller that controls the vertical position of the spindle(height controller)(col. 3 lines 33-45).

It would have been obvious to one of ordinary skill at the time the invention was made or used to modify the teachings of Langer et al. with the teachings of Tseng forms three dimensional objects in rapid prototyping. Allows metal products to have fine, equixed micro structures without manufacturing defects.

As to claim 9, Tseng teaches wherein the said object-projector position controller means is composed of the group selected from base height/position controller, projector height/position controller, tank height/position controller, micro-display height/position controller is taught as the position controller controlling the position controllable platform(col. 3lines 33-45).

It would have been obvious to one of ordinary skill at the time the invention was made or used to modify the teachings of Langer et al. with the teachings of Tseng forms three dimensional

objects in rapid prototyping. Allows metal products to have fine, equixed micro structures without manufacturing defects.

***Claim Rejections - 35 USC § 103***

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Langer in view of Geng.

Langer et al. teaches the claimed invention (claim 1) see paragraph number r9 above.

As to claim 7, Geng teaches wherein the said input device means is composed of the group selected from triangular 3 dimensional image input devices, mesh-oriented 3 dimensional image input device, the slicing type 3 dimensional; image input devices, multi-eyes 3 dimensional image input device, single eye vari-location 3 dimensional image input devices, single eye mono-location 3 dimensional image input devices, ultrasound 3 dimensional image input devices, general 3 dimensional object input device is taught as the system of the camera, light projector, LVWF and object using triangular principle to obtain a three dimensional; image by this triangular information([0003]).

It would have been obvious to one of ordinary skill at the time the invention was made or used to modify the teachings of Langer et al. with the teachings of Geng because Geng contemplates 3D imaging system based on triangular principle it allows Geng to obtain a full-

frame, high spatial resolution of the three dimensional images using standard camera. Since you do not have to use laser no hazard to eyes. Also no theoretical limitation o the measurement accuracy.

***Conclusion***

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chad Rapp whose telephone number is (571)272-3752. The examiner can normally be reached on Mon-Fri 11:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard can be reached on (571)272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chad Rapp  
Examiner  
Art Unit 2125

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